SHISHKINA, E. I.

111-9-13/28

AUTHOR: Shishkina, E.I., Chief Engineer of the TsMTS Industrial Laboratory

TITLE: The Organization of the Technical Operation in the Line Control Room of the Interurban Telephone Network (Organizatsiya tekhnicheskoy ekspluatatsii v lineyno-apparatnom zale MTS)

PERIODICAL: Vestnik Svyazi, 1957, No 9, pp 19-22 (USSR)

ABSTRACT: This description is based on the experience obtained in organizing and coordinating the activity of technicians and engineers by means of a definite distribution of duties and utilization of their professional capacities and time in a line control room of a central interurban telephone exchange. It is suggested to assign the maintenance of channels or systems individually to a determined technician, in order to increase the personal responsibility for the quality of tests performed by him. The statistics of communication disturbances for January and May of 1956, Figure 1, show that a great number of channels which technicians had to check upon request of telephone operators, did not require any adjustment of electric characteristics; the requests were made because the telephone

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The Organization of the Technical Operation in the Line Control Room of the Interurban Telephone Network

operators were overworked. Besides, the diagram, Figure 1, shows that, in a certain line control room, most of adjustments were performed beyond the limits of the first repeating section, i.e. beyond the main station. For this reason, a group of engineers and technicians devised a dispatcher control system which receives requests for channel tests from operators, the telegraph control room, the broadcasting control room and from individual telephone exchanges used by enterprises. The dispatcher's room has two-way service communicationines with all work sites of the technicians. The curves of the monthly average of man hours spent in a line control room in January and May 1956, are shown by Figure 2. These curves are almost the same as those of the number of channels handled by the telephone operators. Figure 3 shows the monthly average of the man hours spent for servicing channels with repeating systems having open air lines at one of the operating points. Figure 4 shows the man hours spent at another operating point where cable lines are used. It is to be noted that the curves of Figures 2, 3 and 4 are of the same nature. The

DEM'YANCHENKO, Georgiy Vasil'yevich; KIRILLOV, Yevgeniy Vladimirovich; SHISHKINA, E.I., otv.red.; KONDRASHINA, N.M., red.; SHEFER, G.I., tekhn.red.

[Measuring apparatus used in wire communication systems] Izmeritel'naia apparatura, primeniaemaia v provodnoi sviazi. Moskva, Gos.izd-vo lit-ry po voprosam sviazi i radio, 1960. 101 p. (MIRA 14:3)
(Electronic measurements) (Telephone lines)

FARBER, Yuliy Davidovich; SHISHKINA, E.I., otv.red.; PETROVA, V.Ye., red.; MARKOCH, K.G., tekhn.red.

[Measuring and tuning of multichannel symmetric multiplexed communication cables] Izmereniia i nastroika mnogokanal'nykh sistem uplotneniia simmetrichnykh kabelei sviazi. Moskva, Gos. izd-vo lit-ry po voprosam sviazi i radio, 1960. 238 p. (MIRA 13:6)

(Electronic measurements) (Electric cables)

MEDVEDOVSKAYA, B.I., inzh.; SHASTINA, Ye.A., inzh.; GORDON, Ye.Yu., inzh.; PROTSENKO, I.Ye., inzh.; LITVINOV, V.P., inzh.; SHISHKINA, E.I., inzh.; POPOVA, N.E., otv.red.; SALITAN, L.S., red.; KARABILOVA, S.F., tekhn.red.

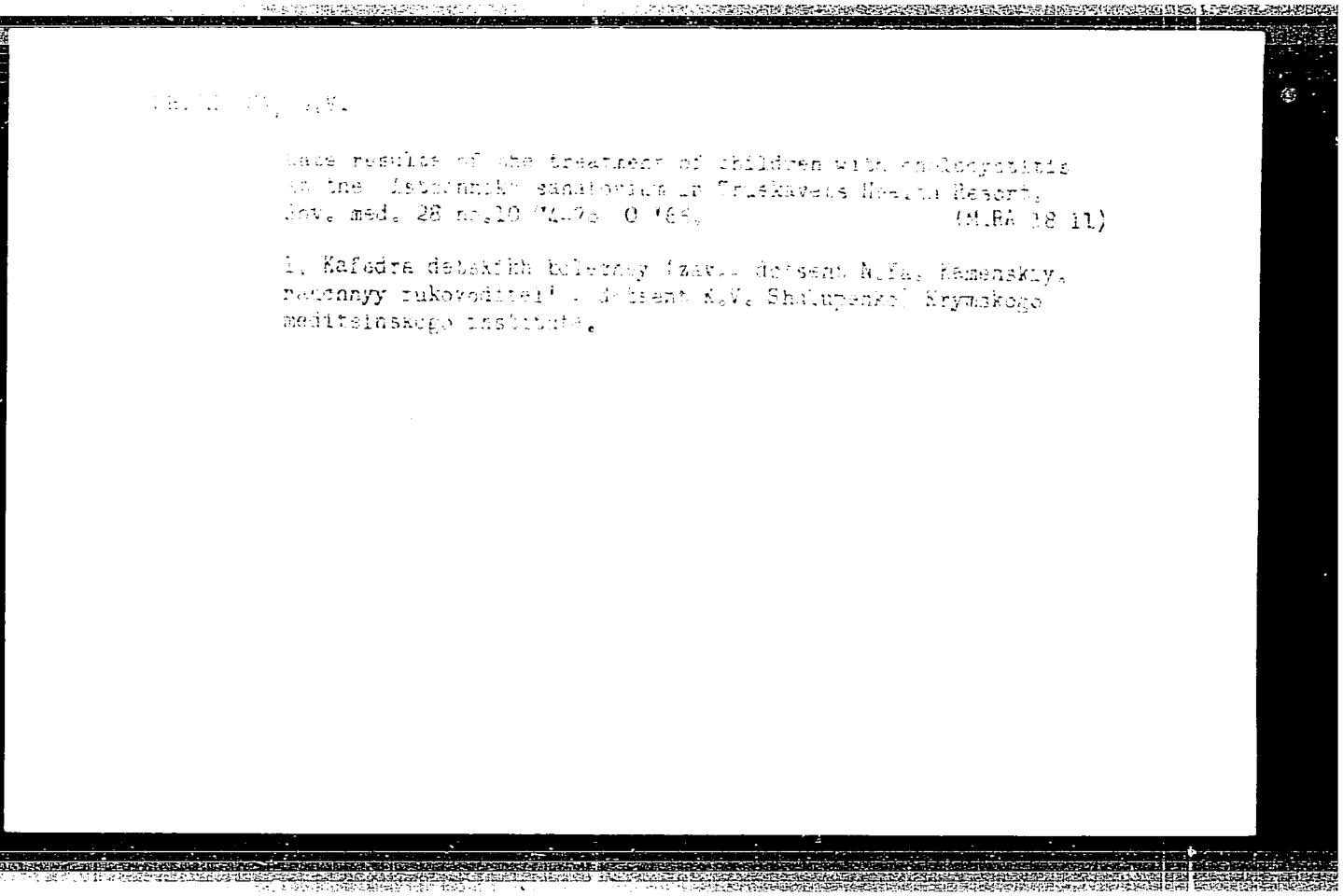
[Handbook for the certification of multiplexing channels in domestic cable and overhead line communication systems] Rukovodstvo po paspor-tizatsii kanalov otechestvennykh sistem uplotneniia vozdushnykh i kabel'nykh linii sviazi. Moskva, Gos.izd-vo lit-ry po voprosam sviazi i radio, 1960. 261 p. (MIRA 13:9)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye mezhdugorodnoy telefonno-telegrafnoy svyazi.
(Telecommunication)

AGEKYAN, T.A.; KAVRAYSKAYA, K.V.; PLYUGIN, G.A.; STRUGATSKIY, B.N.; SHISHKINA, G.A.

An indication of the interaction of stars and diffuse matter. Astron.zhur. 33 no.5:679-681 S-O '56. (MLRA 9:12)

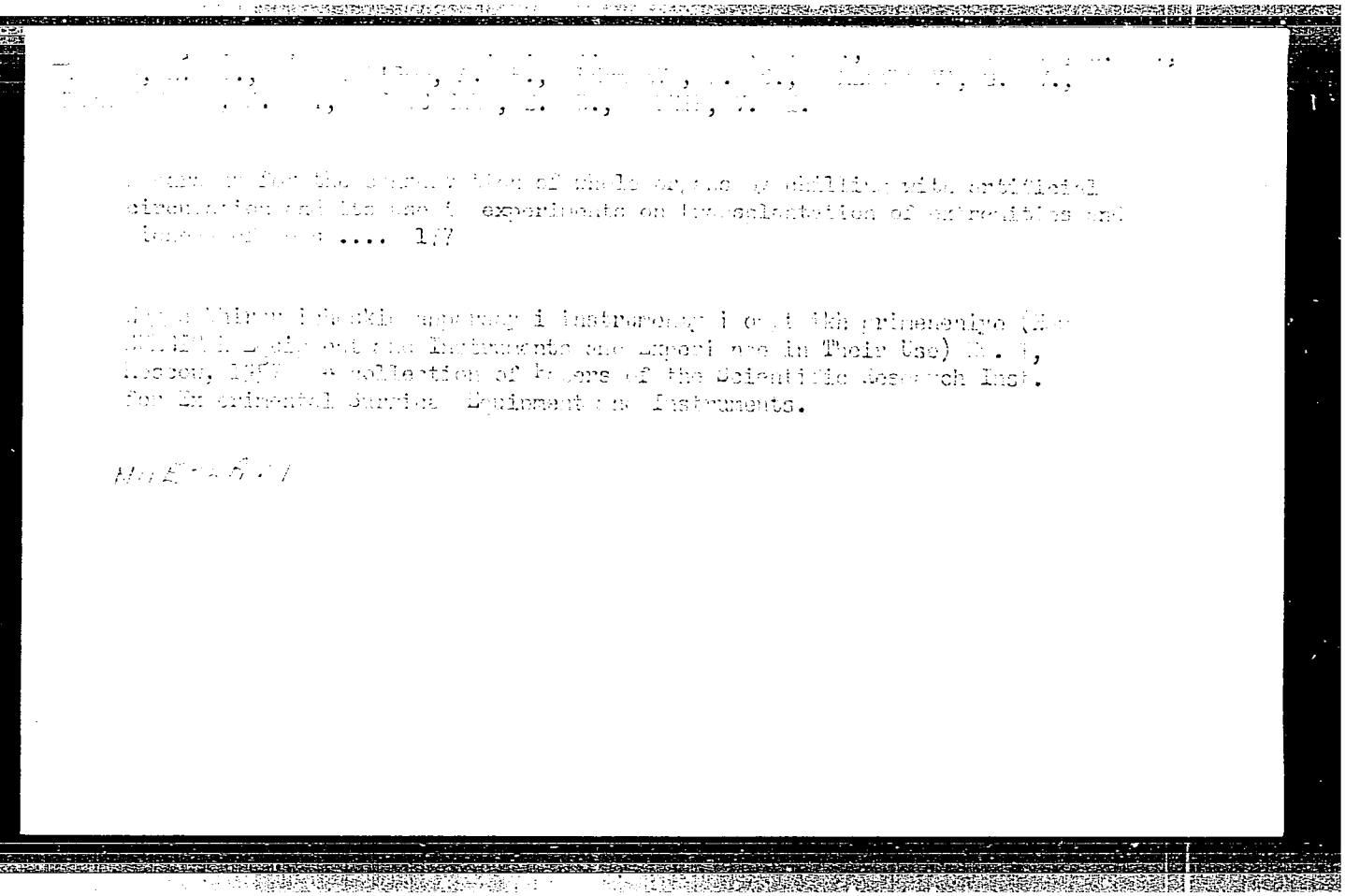
1. Astronomicheskaya observatoriya Leningradskogo gosudarstvennogo universiteta.
(Stars) (Interstellar matter)



[illegible], A.M.

Some results of the treatment of children with encephalitis in the Detskiy sanatoriy in Truskavets Health Resort. Zdrav. med. 28 no.10 [illegible] O '65. (MIRA 18:11)

1. Kafedra detskikh bolezney [zaved. dotsent N.Ya. Nemensky], nauchnyy rukovoditel' - dotsent K.V. Shilupenko] Krymskogo meditsinskogo instituta.



LEVITSKAYA, L.A., SHISHKINA, I.D., KONDRAT'YEVA, N.I., SUPKO, N.S.

Hematological factors in artificial circulation [with summary in English]
Eksper.khir. 3 no.3:42-47 My-Je '58 (MIRA 11:8)

1. Iz nauchno-issledovatel'skogo instituta eksperimental'noy khirurgicheskoy apparatury i instrumentov (dir. M.G. Anan'yev) Ministerstva zdravookhraneniya SSSR.

(HEART, artif.
extracorporeal circ., eff. of heparin & protamine sulfate on blood coagulation (Rus))
(HEPARIN, eff.
on blood coagulation in extracorporeal circ. in open heart surg. (Rus))
(PROTAMINES, eff.
sulfate, on blood coagulation in extracorporeal circ. in open heart surg. (Rus))
(BLOOD COAGULATION, eff. of drugs on
in extracorporeal circ. in open heart surg. (Rus))

FEDOTENKOV, A.G.; SHISHKINA, I.D.; LEVITSKAYA, L.A.

Freezing of bone marrow for its preservation at low temperature
Report no.1. Probl. gemat. i perel. krovi 8 no.5:16-22 My'63.
(MIRA 16:7)

1. Iz TSentral'nogo ordena Lenina instituta gematologii i perelivaniya krovi (direktor - dotsent A.Ye.Kiselev) i Nauchno-issledovatel'skogo instituta eksperimental'noy khirurgicheskoy apparatury i instrumentov. (direktor M.G.Anan'yev).
(TISSUES—PRESERVATION) (MARROW)

ACC NR: AR6031737 (A) SOURCE CODE: UR/0299/66/000/009/M029/M029

AUTHOR: Shishkina, I. D.; Levitskaya, L. A.; Lipovetskiy, G. S.

TITLE: Hematological research on transplanting extremities in dogs

SOURCE: Ref. zh. Biologiya, Part II, Abs. 9M167

REF SOURCE: Tr. 1-go Mosk.med. in-ta, v. 42, 1965, 148-152

TOPIC TAGS: transplantation, extremity transplantation, dog transplant

ABSTRACT: The blood of a dog was studied whose rear extremities had been transplanted within 30—90 minutes after amputation, after preserving the extremity for 24 and 48 hours at +2C, +4C after transplantation with 1-45 days and after every 6 months. The changes in the blood pattern during autotransplantation in both the nonpreserved and in the preserved extremity in 24 and 48 hours were analogous. During the transplantation of the extremity the blood composition showed a change at a somewhat later time and both qualitative and quantitative differences were observed. The author explains this by the immunobiological reaction of the organism to the transplant of foreign tissue and by the effect of the

Card 1/2 UDC: 577.99

L 08407-67
ACC NR: AR6031737

6-mercaptopurine, used for inhibiting this reaction. The amputation of extremities in dogs was accompanied by a decrease of heparin in the blood, an increase of fibrinogen content and sometimes an increase of the prothrombin index. The use of anticoagulants according to a given procedure made it possible to prevent and actively conduct therapy of clotting already in process. [Translation of abstract]

SUB CODE: 06/

SHISHKINA, I.I.

3

Study of reaction rates in the reduction of silver ions by developing agents. G. P. Faer'man and I. I. Shishkina. *Uspekhi Nauch. Fotografii* 4, 184-76(1955). Reaction rates depend on the compn. of the buffer soln. Developing agents, in order of magnitude of the reaction rates, are: *p*-phenylenediamine, *p*-aminophenol, and hydroquinone. The magnitude of change in reaction rates owing to a change in pH of the buffer soln. is also: *p*-phenylenediamine, *p*-aminophenol, and hydroquinone. The reaction rates are best characterized by the magnitude of the max. reaction rate, detd. by a graphic differentiation of the function $D = f(t)$. The max. reaction rates vary with the pH in the same way as does the concn. of the active parts of the developing agent (undissocd. mols. and ions in *p*-aminophenol, undissocd. mols. in *p*-phenylenediamine, and anions in hydroquinone). The effect of lyophylic colloids on the catalytic activity of the reaction is as follows: albumins and gelatin decrease, hydrocarbons slightly increase the reaction rates, and poly-(vinyl alc.) is without effect. R. S. Lubomirski

SHISHKINA, I.S.

Carbohydrate-amylase complex in the grain of some varieties of winter wheat tested at the variety testing stations of southern Kazakhstan. Trudy Inst. bot. AN Kazakh. SSR. 12:152-160 '62. (MIRA 15:5)

(Kazakhstan--Wheat--Varieties)
(Carbohydrates) (Amylase)

DARKANBAYEV, T.B.; KAPTYUSHINA, G.A.; SHISHKINA, I.S.

Baking quality of some varieties of winter wheat of Kazakhstan.
Izv.AN Kazakh.SSR.Ser.bot.i pochv. no.3:62-65 '62. (MIRA 15:12)

(Kazakhstan—Wheat)

DARKANBAYEV, T.B.; KAPTYUSHINA, G.A.; SHISHKINA, I.S.; AKHMETOVA, N. Ya.

Biochemical and some technological indices of the grain of the winter wheats of Kazakhstan. Trudy Inst. bot. AN Kazakh.SSR 16: 3-37 '63 (MIRA 17:8)

GEL'FMAN, Ya. A., kand. tekhn. nauk; IVANOVA, N. I., inzh.; SHISHKINA, I. V.

Manufacturing polyvinyl chloride finishing and decorative films. Sbor. trud. VNIINSM no.5:3-24 '61. (MIRA 15:10)

(Vinyl compound polymers)

GEL'FMAN, Ya.A.; SHISHKINA, I.V.; IVANOVA, N.N.

Extending the life of finishing and ornamental polyvinyl chloride films. Plast. massy no.12:69-70 '62. (MIRA 16:1)
(Plastic films) (Vinyl compound polymers)

GEL'FMAN, Ya.A., kand. tekhn. nauk; SHISHKINA, I.V., inzh.

Coloring matter for finishing and decorative polyvinyl chloride films. Sbor. trud. VNIINSM no.7:29-34 '63.

Finishing polyvinyl chloride films with a layer of glue. Ibid.: 35-40 '63. (MIRA 17:11)

L 64384-65

ACCESSION NR: AP5019484 UR/0329/65/000/007/0009/0010
661.728:678.542.32

AUTHOR: Shishkina, I. V.; Stromskaya, E. G.; Nechayeva, S. A.

TITLE: Mercerization of undried cellulose

SOURCE: Bumazhnaya promyshlennost', no. 7, 1965, 9-10

TOPIC TAGS: mercerization, cellulose, paper industry

ABSTRACT: The effect of temperature, mercerization time, and concentration of caustic soda on the composition of undried alkaline cellulose (70% moisture content) was studied. The mercerization was carried out in 40 min with an 18% NaOH solution, and the amount of NaOH present in the alkali cellulose was determined. It was found that under the same conditions, the amount of alkali fixed by the undried cellulose is somewhat greater than the amount bound by dried cellulose (with a 7% moisture content). The reactivity of undried cellulose is higher than that of dried cellulose during the NaOH treatment. It is postulated that this high reactivity is due to the greater specific surface of undried cellulose, and hence to a greater accessibility of the hydroxyl groups which take part in the reaction. Orig. art. has: 3 figures and 1 table.

Card 1/2

L 64384-65

ACCESSION NR: AP5019484

ASSOCIATION: Sibirskiy tekhnologicheskiy institut (Siberian Technological Institute)

SUBMITTED: 00 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 000 OTHER: 000

Card 2/2

SHISHKINA, K.A., Cand Vet Sci -- (diss) "Data ~~from~~ experimental study of the biological properties of the virus IEM of horses and ~~diagnostic research methods of~~ this ~~sickness.~~" Kazan', 1958, 16 pp. (Min of Agr USSR. Kazan' State Zoo-Vet Inst im N.E. Bauman) 150 copies (KL, 32-58, 110)

SHIGIN, L.A., kand. vet. nauk

Use of tagged fluorescent antibodies for detecting the virus of infectious encephalomyelitis in the brain of rabbits. Uch. zap. KVI 89:35-41 '62.

Use of the method of fluorescent antibodies for detecting the virus of infectious equine encephalomyelitis in mosquitoes of the genus Culex. Ibid.:49-54

Detection of the virus of infectious equine encephalomyelitis in some objects of the external environment using the fluorescent antibody method. Ibid.:95-102 (MIRA 18:8)

1. Virusologicheskaya laboratoriya (zav. - prof. F.Z.Amfiteatrov) Kazanskogo veterinarnogo instituta.

SHISHKIN, N.A., kand.veterin.nauk; GEMATUTDINOVA, K.A., starshiy laborant.

Detecting the virus of infectious equine encephalomyelitis in the ticks Dermacentor marginatus and Hyalomma detritum by the method of fluorescent antibodies. Uch. zap. KVI 89:55-59 '62. (MIRA 18:8)

1. Virusologicheskaya laboratoriya (zav. - prof. F.Z.Amfiteatrov) Kazanskogo veterinarnogo instituta.

GEMADUTDINOVA, K.A.; RZHEVSKAYA, G.F.; SHISHKINA, K.A.

Inhibitive effect of some organophosphorus compounds on the foot-and-mouth disease virus. Nauch. trudy Kaz. gos. med. inst. 14:141-142 '64. (MIRA 18:9)

1. Virusologicheskaya laboratoriya (zav. - prof. F.Z.Amfiteatrov) Kazanskogo veterinarnogo instituta i kafedra farmakologii (zav. - dotsent T.V.Raspopova) Kazanskogo meditsinskogo instituta.

L 10361-66 EWT(1)/EWA(j)/EWA(b)-2 JK

ACC NR: AP5028191 SOURCE CODE: UR/0346/65/000/009/0017/0019

AUTHOR: Shishkina, K. A. (Candidate of veterinary sciences)

ORG: Kazan' Veterinary Institute (Kazanskiy veterinarnyy institut)

TITLE: Tissue cultivation of foot and mouth disease virus

SOURCE: Veterinariya, no. 9, 1965, 17-19

TOPIC TAGS: foot and mouth disease, veterinary medicine, fluorescence, virology, antigen

ABSTRACT: Five strains of foot and mouth disease virus isolated in the Tatar ASSR in 1962-1963 (strains 1, 5, 14, and 15 obtained from cattle and strain 12 obtained from swine) produced a cytopathogenic effect in cultures of swine and bovine renal epithelium. Strains 1 and 5 grew vigorously in a renal tissue culture from rabbits 10--24 hours old. The indirect method of fluorescing antibodies permitted visual detection of the fluorescing viral antigen after 10-18 hours in cells of all the aforementioned tissue cultures. Observation of the interaction of the virus and the cells under the luminescence microscope for 120 hours revealed that the virus antigen gradually accumulates in certain parts of the cells, an indication of the strict specificity of the luminescence.

SUB CODE: 06/ SUBM DATE: none ORIG REF: 002/ OTH REF: 002

UDC: 619 : 616.988.43=093.35

Card 1/1

SHISHKINA, L.A.

5.4-263 551.574.42

Shishkina, L. A., Iskliuchitel'nyi gololed. [Exceptional glaze.] *Priroda*, Moscow, 44(12):113-114, Dec. 1955. 2 figs. DLC—An exceptionally heavy glaze observed in the region of Tuapse during 114 hours on Feb. 18–23, 1954, when the thickness of ice on wires and tree branches attained 5 cm, and the ground, houses and trees were covered with an ice crust which could be removed only with the aid of axes and hammers, is described in detail, with an analysis of s noptic conditions preceding the beginning and termination of the glaze. *Subject Headings:* 1. Glaze 2. Icing of wires 3. Tuapse, U.S.S.R.—*A.M.P.*

SHISHKINA, L.A.

Effect of the cover crop on the water cycle, growth, and development of red clover during its first year of life. Izv. Kazan. fil. AN SSSR, Ser. biol. nauk no.5:10-34 '56. (MLRA 10:6)
(Tatar A.S.S.R.--Clover)

SHISHKINA, L.A.

Marine hydrological profiles in the region of Tuapse. Mezhdunar. geofiz.god no.3:126-134 '61. (MIRA 14:10)

1. Tuapse Marine Hydrometeorological Station.
(Black Sea--Hydrology)

SOV/180-59-3-17/43

AUTHORS: Savitskiy, Ye.M., Tylkina, M.A. and Shishkina, L.L. (Moscow)

TITLE: The Phase Diagram of the Tungsten-Rhenium System and Properties of its Alloys

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1959, Nr 3, pp 99-107(USSR)

ABSTRACT: Microstructural and X-ray investigations were used as a basis for constructing the phase diagram. Melting points, hardness and microhardness of the various constituents were measured. The resulting phase diagram is given in Fig 1. Microstructures are shown in Fig 2 and 3 and X-ray photographs in Fig 4. There is a solid solution (α) up to 45% Re near the alloy melting point, falling to 32% at 1100°C. In this region hardness increases with increasing Re content to 420 kg/mm^2 at 25% Re. A peritectic reaction takes place at 2890°C. Liquid $+\alpha \rightleftarrows \sigma$. The σ phase has a complex tetragonal lattice with a = 9.53A, c = 4.95A and c/a = 0.52. This phase extends from 40 to 66 wt % Re at 1100°C and from 45 to 66% at 2000°C. It is very brittle and has a hardness of 2000 kg/mm^2. The solid solution of tungsten in rhenium extends to 15% W near the melting point and

Card 1/3

The Phase Diagram of the Tungsten-Rhenium System and Properties of its Alloys

12% at 1100°C. There is a eutectic between the σ phase and the β solid solution at 75% Re and 2815°C. The microhardness of the eutectic is 800 kg/mm^2. The two phase region (β + σ) is very narrow. There is a peritectoid reaction as follows: σ + β⇄X. The X phase has parameter a = 9.57A and is of the α-Mn type. Its microhardness is 1500 kg/mm^2. Alloys with up to 20% Re have high electrical resistance, strength and plasticity. Fig 1 shows the influence of temperature on properties and Fig 5 the influence of Re on strength. W-Re alloys could be used in the electrical industry. Fig 6 shows the external appearance of electrical contacts after corrosion in moisture. Re after 50 days (a) is in much better condition than W after 30 days and (b) W-Re alloys could also be used in industry where high mechanical properties and close tolerances are required. There are 6 figures, 1 table and 11 references, 3 of which are

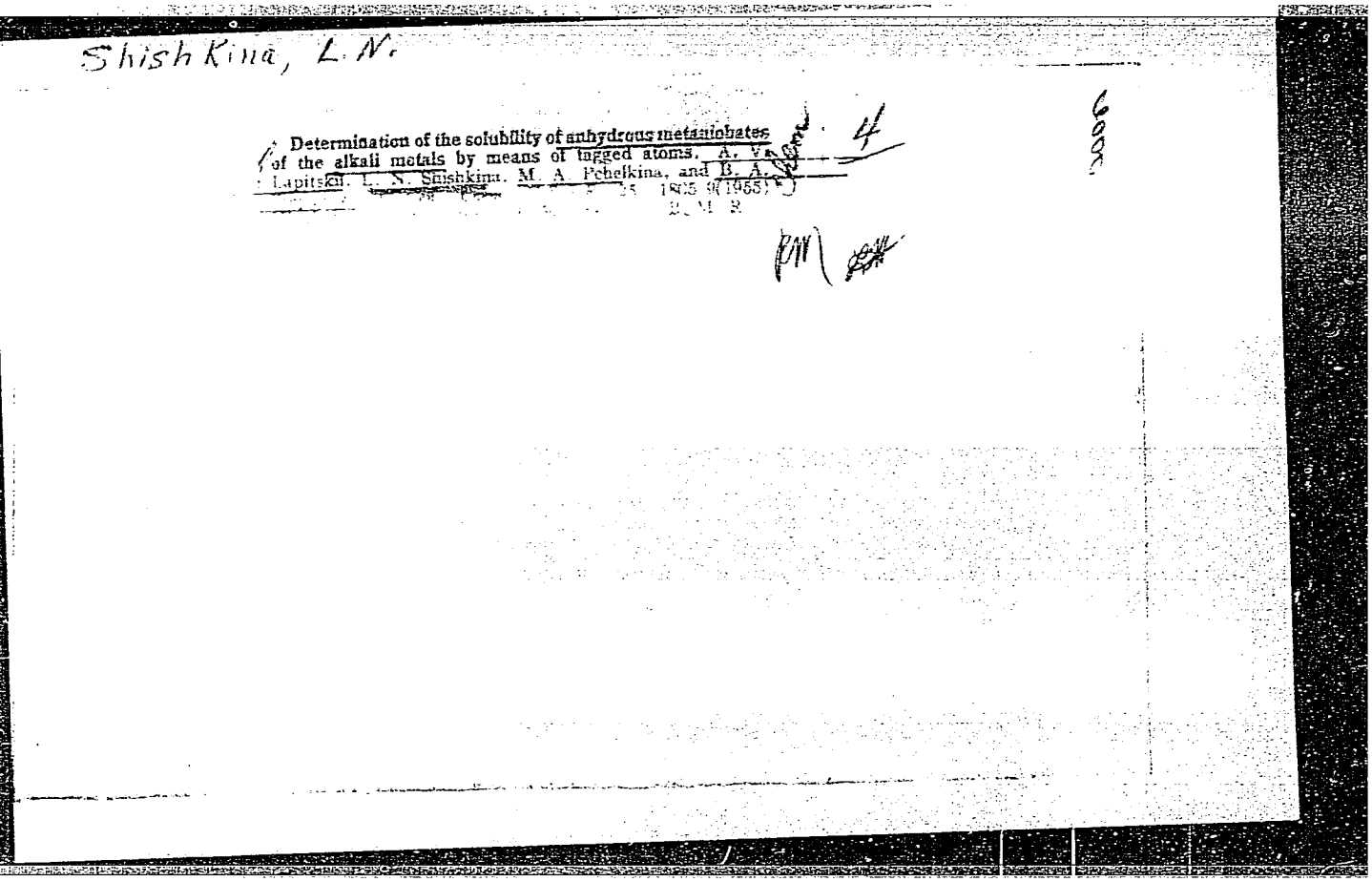
SOV/180-59-3-17/43

The Phase Diagram of the Tungsten-Rhenium System and Properties of its Alloys

English, 1 German, 1 Polish and 6 Soviet.

SUBMITTED: February 7, 1959

Card 3/3



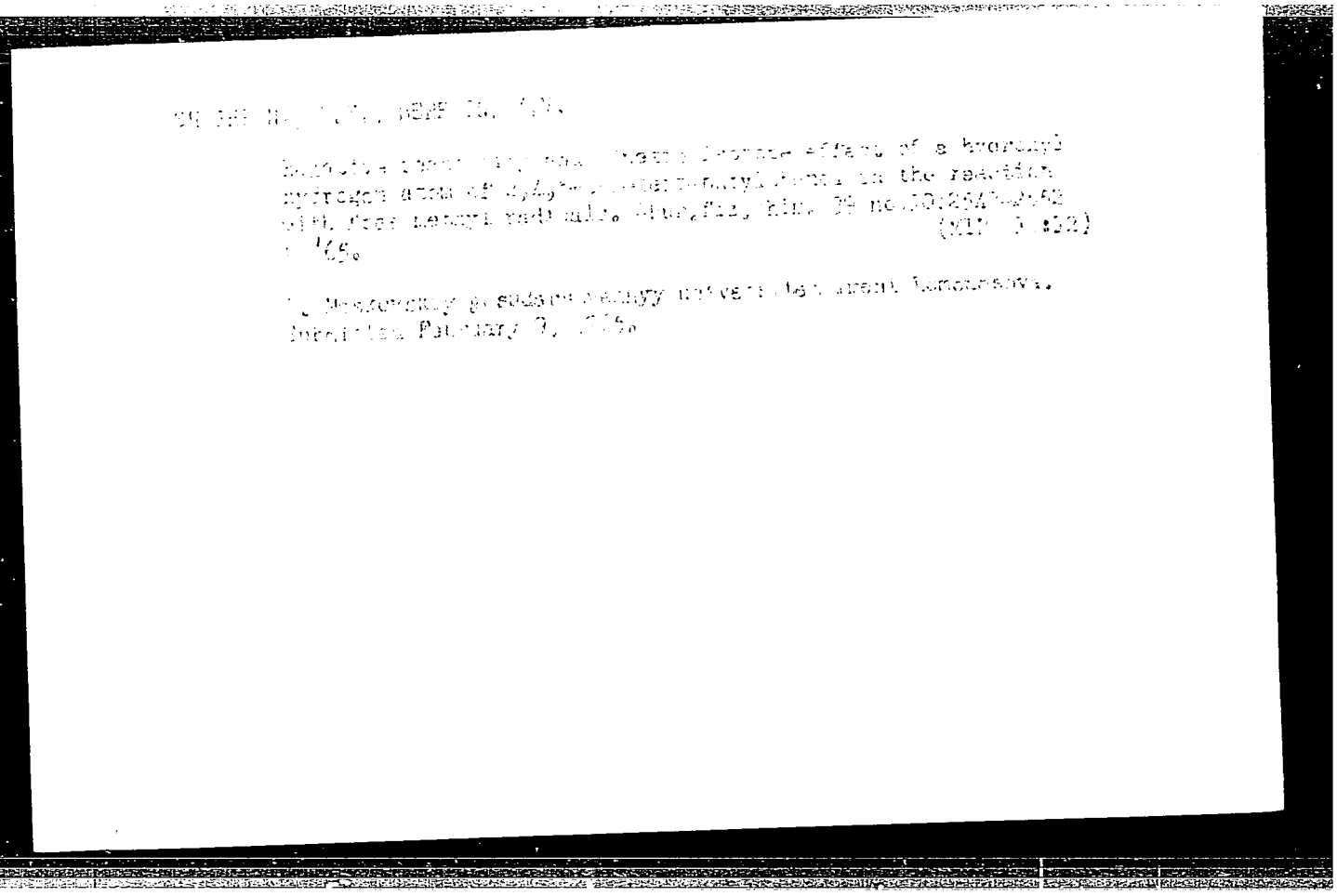
Shishkina, L. N.

Determination of the solubility of anhydrous metaniobates of the alkali metals by means of tagged atoms. A. V. Lapitskii, L. N. Shishkina, M. A. Pchelkina, and B. A. [illegible] 1965 9(1965)

LAPITSKIY, A.V.; SHISHKINA, L.N.; PCHELKINA, M.A.; STEPANOV, B.A.

Tracer study of the solubility of anhydrous metaniobates of alkali metals. Zhur. ob. khim. 25 no.10:1862-1866 S '55. (MIRA 9:2)

1.Moskovskiy gosudarstvennyy universitet.
(Solubility) (Alkali metal metaniobates) (Radioactive tracers)



L.V. SHISHKINA, L [illegible] YA NYY and T I DEMINA

"Development of Gas Absorbers for Magnetrons" from Annotations of Works Completed in 1955 at the State Union Sci. Res. Inst. Min. of Radio Engineering Ind.

So: B-3,080,064

L 10509-66 EWT(m)/EWP(j) RPL RM

ACC NR: AP5027179 SOURCE CODE: UR/0076/65/039/010/2547/2552

AUTHOR: Shishkina, L. N.; Berezin, I. V. 44

ORG: Moscow State University im. M. V. Lomonosov 44 (Moskovskiy gosudarstvennyy universitet) 46 B

TITLE: Relative reactivity and kinetic isotope effect of the hydroxyl hydrogen atom of 2,4,6-tri-tert-butylphenol in the reaction with free methyl radicals 7, 44

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 10, 1965, 2547-2552

TOPIC TAGS: tritium, hydrogen, free radical, hydroxyl group, heptane, phenol, methane, chemical reaction

ABSTRACT: Using the method of competing reactions, the authors studied the relative reactivity of the hydroxyl hydrogen atom of 2,4,6-tri-tert-butylphenol in the reaction with methyl radicals in n-heptane. The standard reaction chosen was the well-known system

$$CH_3^{\cdot} + C_7H_{16} \xrightarrow{k^{CH}} CH_4 + C_7H_{15}^{\cdot},$$

$$CH_3^{\cdot} + C_7H_{15}T \rightarrow CH_3T + C_7H_{15}^{\cdot}.$$

In addition, the following reaction took place:

$$CH_3^{\cdot} + ROH \xrightarrow{k^{OH}} CH_4 + RO^{\cdot}.$$

where R stands for

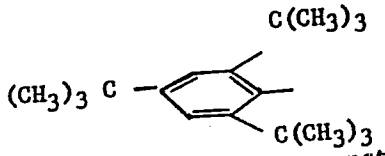
Card 1/2

UDC: 541.124/.128

2

L 10509-66

ACC NR: AP5027179



Values were obtained for the relative rate constants of the reactions involving the detachment of hydroxyl hydrogen atoms (k^{OH}/k^{CH}) and tritium atoms (k^{OT}/k^{CH}) of 2,4,6-tri-tert-butylphenol by the methyl radical in n-heptane. It is shown that k^{OH}/k^{CH} and k^{OT}/k^{CH} are independent of the extent of decomposition of acetyl peroxide and of the concentration of the butylphenol. The temperature dependence of k^{CH}/k^{CH} shows a deviation from the Arrhenius law. The value of the hydrogen-tritium kinetic isotope effect k^{OH}/k^{OT} of the hydroxyl hydrogen atom of the butylphenol in the reaction with the methyl radical was determined. Orig. art. has: 2 figures, 4 tables, and 6 formulas.

SUB CODE: 07 / SUBM DATE: 09Feb65 / ORIG REF: 010 / OTH REF: 011

jw

Card 2/2

ШЛЫКИН, Н. Ч.

Infrared emission of the night sky.
Uspekhi fizicheskikh nauk, 1949, v. 38, no. 3, p 450-452.

SHISHKINA, fnu

Jun 49

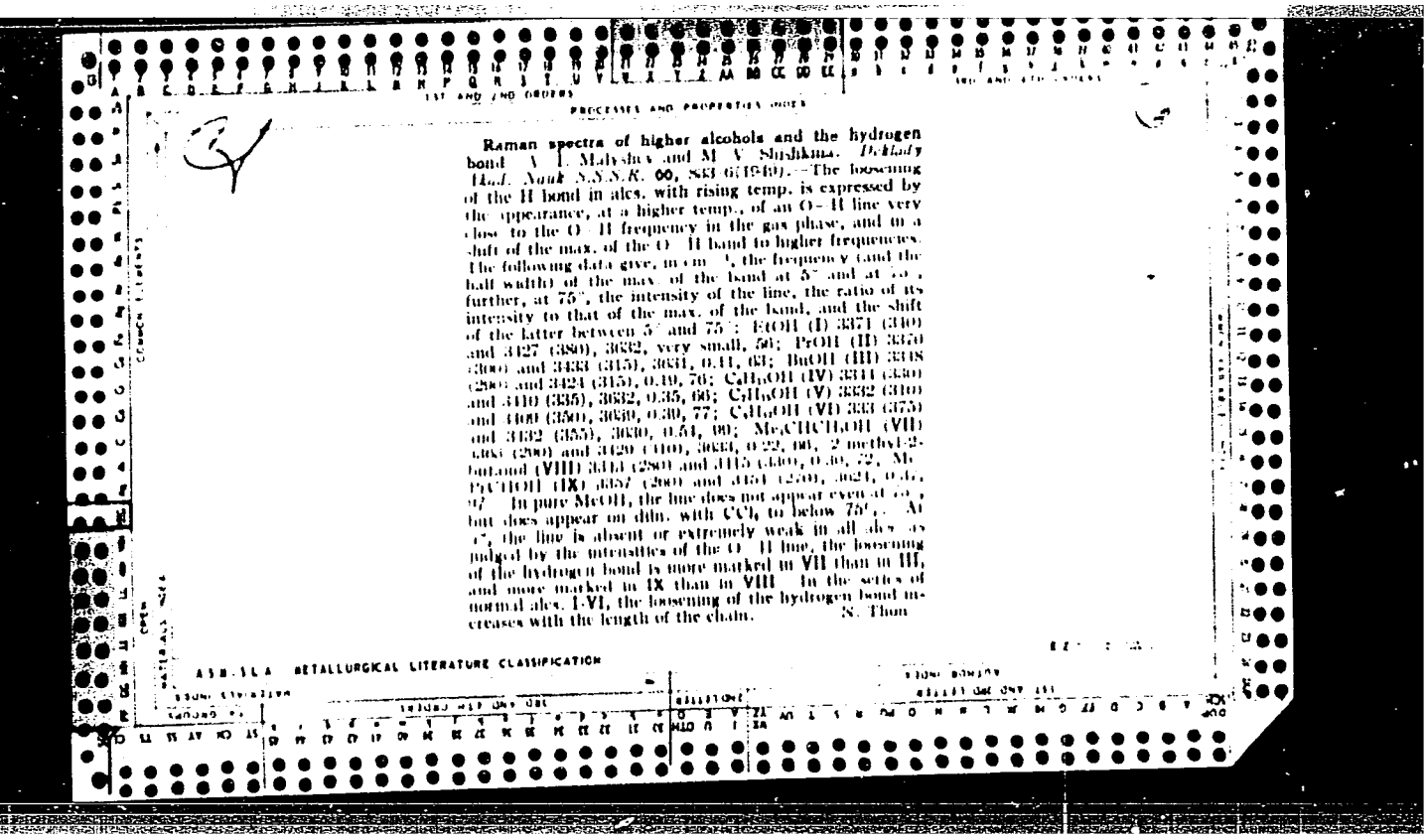
USSR/Chemistry - Hydrogen Bond
Chemistry - Dispersion

"Combination Dispersion of Light in Higher Alcohols and the Problem of the Hydrogen Bonds," V. I. Malyshev, Shishkina, Phys In st i-eni P.N. Lebedev, Acad Sci USSR, 3 3/4pp

"Dok Ak Nauk SSSR" Vol LXIV, No 5

Studies combination dispersion spectra of ten monatomic alcohols from methyl to cetyl alcohol for various temperatures. Tabulates results. Submitted by Acad G. S. Landsberg, 13 Mar 49.

PA 50/49T26



Raman spectra of higher alcohols and the hydrogen bond. V. T. Malyshev and M. V. Shishkina. *Doklady Akad. Nauk S.S.S.R.* 00, 883-6(1949).—The loosening of the H bond in alcs. with rising temp. is expressed by the appearance, at a higher temp., of an O–H line very close to the O–H frequency in the gas phase, and in a shift of the max. of the O–H band to higher frequencies. The following data give, in cm.$^{-1}$, the frequency and the half width) of the max. of the band at 5° and at [illegible], further, at 75°, the intensity of the line, the ratio of its intensity to that of the max. of the band, and the shift of the latter between 5° and 75°: EtOH (I) 3371 (310) and 3427 (380), 3632, very small, 50; PrOH (II) 3370 (300) and 3433 (315), 3631, 0.41, 63; BuOH (III) 3348 (280) and 3424 (315), 0.49, 76; $C_5H_{11}OH$ (IV) 3344 (330) and 3410 (335), 3632, 0.35, 66; $C_7H_{15}OH$ (V) 3332 (310) and 3409 (350), 3630, 0.30, 77; $C_8H_{17}OH$ (VI) 333 (375) and 3432 (355), 3630, 0.51, 90; Me_2CHCH_2OH (VII) 3363 (280) and 3420 (310), 3631, 0.22, 40; 2-methyl-2-butanol (VIII) 3413 (280) and 3415 (330), 0.30, 72; $Me_2EtCHOH$ (IX) 3357 (260) and 3451 (320), 3624, 0.45, 97. In pure MeOH, the line does not appear even at 0°, but does appear on dilu. with CCl_4 to below 75°. At 0°, the line is absent or extremely weak in all alcs. as judged by the intensities of the O–H line, the loosening of the hydrogen bond is more marked in VII than in III, and more marked in IX than in VIII. In the series of normal alcs. I–VI, the loosening of the hydrogen bond increases with the length of the chain. S. Thon

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

SHISHKINA, M. V.

USSR/Physics - Combination Scattering; Chemistry - Alcohols Apr 50

"Studying the Association of a Series of Saturated Monoatomic Alcohols by the Method of Combination Scattering of Light," V. I. Malyshev, M. V. Shishkina, Phys Inst imeni Lebedev, Acad Sci USSR, 7 pp

"Zhur Eksper i Teoret Fiz" Vol XX, No 4

Presents results of studies on spectra of combination scattering of monoatomic alcohol for various temperatures. Observes that, in spectra of these alcohols, oscillation band of OH group possesses two maximums with frequencies 3, 400/cm and 3,630/cm ascribed to assocation and dissociation molecular spectra. Shows relative intensity of these maximums depends upon temperature, and upon magnitude and structure of hydrocarbon part of alcohol molecule. Submitted 20 Apr 49

PA 159T98

SHISHKINA, M.V.

Investigation of straight-distillation gasoline from Surakhan petroleum. G. D. Gal'pern, M. V. Shishkina, and M. I. Shchetsko. *Trudy Vsesoyuz. Soveshchaniya po Khim. i Pererabotke Nefti, Baku*, Sept., 1951, *Akad. Nauk Azerbaidzhan. S.S.R.* 1953, 123–35; *Referat. Zhur., Khim.* 1954, No. 27035.—Aromatic hydrocarbons were first removed by sulfonation to give a neg. formolite reaction (Nastyukov method, *C.A.* 20, 408). Fine fractionation of the gasoline was carried out in a 2-m. column provided with a Levin head, and d, *n*. (at various wave lengths), and the spectra of combined scattering were detd. on the fractions. Part of the fractions were dehydrogenated and freed from aromatics, and the concn. of naphthenes and paraffins was detd. refractometrically. The ratio of dimethylcyclohexanes was checked by dehydrogenation of the corresponding fractions by the Zelinskii and Kazanskii method (*C.A.* 26, 77) followed by spectrographic analysis of the catalyzates. Analytical dehydrogenation was carried out so as to suppress hydrogenolysis of cyclopentanes by using Pt-coated C (with admixt. of Fe) prepd. without preliminary pptn. of the Pt with HCHO. The content of aromatic hydrocarbons in the catalyzates was detd. by specific dispersion. The results of this investigation showed the ratio of naphthenic to paraffinic hydrocarbons to be: C_5 0.2, C_6 1.7, C_7 4.8, C_8 3.5, and C_9 2.0. The main components of the gasoline were found to be methylcyclohexane, *trans*-dimethylcyclohexane, cyclohexane, methylcyclopentane, and *trans*-dimethylcyclopentanes. A considerable quantity of hydrindene was believed to be present.

M. Hoseh

SHISHKINA, M. V.

USSR/Chemistry - Petroleum

Dec 53

"Raman Spectra of Thianthrene (I), Phenylcyclohexyl-sulfide (II), and 2,5-Dimethylthiophene (III)," M. V. Shishkina, Petroleum Inst (Moscow), Acad Sci USSR

Zhur Fiz Khim, Vol 27, No 12, pp 1877-81

The characteristic frequencies of the Raman spectra of I (in a carbon tetrachloride soln), II, and III were detd -- those of II and III for the first time.

275T17

SHISHKINA, M. V.

1 Aug 53

USSR/Chemistry - Petroleum

"Individual Aromatic Hydrocarbons of the Gasoline Fraction From Petroleum Occuring in the Red-Colored (1) Stratum of Nebit-Dag", Acad A.V. Topchiyev, I.A. Musayev, M.V. Shishkina, G. D. Galpern, Petroleum Inst, Acad Sci USSR

DAN SSSR, Vol 91, No 4, pp 869-871.

Investigated the chemical composition of Nebit-Dag petroleum in order to compare it with that of other Caspian crudes. Found that in the gasoline fraction boiling up to 175° , 1, 2, 4-- trimethylbenzene, ethylvenzene, o-xylene, and m-xylene comprise 52.8% of the total content of aromatics.

272T7

TOPCHIYEV, A.V., akademik; MUSAYEV, I.A.; SHISHKINA, M.V.; GAL'PERN, G.D.

Investigation in the composition of Nebit-Dag petroleum. Report 2.
Trudy Inst. nefti 4:10-17 '54. (MLRA 8:1)
(Nebit-Dag--Petroleum--Analysis) (Nebit-Dag--Hydrocarbons)

SHISHKINA, M. V.

TOPCHIYEV, A.V.; MUSAYEV, I.A.; GAL'PERN, G.D.; SHISHKINA, M.V.

Analysis of the composition of Nebit-Dag petroleum. Trudy Inst. nefti no.6:3-11 '55. (MLRA 8:12)
(Nebit-Dag--Petroleum--Analysis)

SHISHKINA, M.V.

Composition of the naphthene portion of the kerosine fraction of Tulmazinsk (Devonian) crude oil. A. V. Topchiev, L. M. Rozenberg, M. M. Kusakov, and M. V. Shishkina (Petroleum Inst., Moscow). *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1956, 1109–19.—Ultraviolet spectrography of the aromatic hydrocarbons formed by dehydrogenation (Zelinskii, *C.A.* 6, 698) of the naphthene portion of the kerosine, showed that the kerosine contains meta and para isomers of alkylcyclohexanes, including monoalkyl branched derivs., as well as trialkylcyclohexanes with side chains in the 1,3,5- and 1,2,4-positions. Among the tetraalkylcyclohexanes 1,2,3,4- and 1,2,3,5-distributions predominate. The presence of penta- and hexaalkylcyclohexanes is not excluded by this work. The kerosine contains also dihydroacenaphthene, and decahydronaphthalene and its homologs, but dicyclohexyl is absent. G. M. K.

KUSAKOV, M.M.; NIFONTOVA, S.S.; POKROVSKAYA, Ye.S.; ROZENBERG, L.M.; TORCHIYEV, A.V.; SHISHKINA, M.V.

Absorption spectrum study in the near ultraviolet region of the structure and group composition of the kerosene fraction. Fiz. sbor. no.3:321-326 '57. (MIRA 11:8)

1. Institut nefti AN SSSR.
(Kerosene—Spectra)

GAL'PERN, G.D.; KISLINSKIY, A.N.; MUSAYEV, I.A.; TOPCHIYEV, A.V.; SHISHKINA, M.V.

Raman spectrum study of gasoline-ligroine fractions. Fiz. sbor. no.3:329-333 '57. (MIRA 11:8)
(Gasoline--Spectra) (Ligroine--Spectra)

TOPCHIYEV, A.V.; KUSAKOV, M.M.; NIFONTOVA, S.S.; SUCHKOVA, A.A.; SHISHKINA, M.V.

Investigating condensed aromatic hydrocarbons from the kerosene fraction of Romashkino oil. Khim. i tekh. topl. i masel no.9:1-7 S '57. (MLRA 10:11)

1. Institut nefti AN SSSR.
(Chkalov Province--Petroleum) (Hydrocarbons--Analysis)

GAL'PERN, G.D.; SHISHKINA, M.V.; SHCHETSKO, M.I.

Light naphthene and paraffin hydrocarbons in ordinary Surakhany petroleum. Trudy inst. nefti. 10:59-73 '57. (MIRA 11:4)
(Surakhany region--Petroleum)
(Paraffins) (Naphthene)

SOV/65-58-9-3/16

AUTHORS: Niyazov, A. M; Vakhabova, Kh; Shishkina, M. V.

TITLE: Condensation of Aromatic Hydrocarbons with a Light Oily Fraction of Cheleken Petroleum. (Kondensirovannyye aromaticheskiye uglevodorody legkoy maslyanoy fraktsii Chelekenskoy nefti)

PERIODICAL: Khimiya i Tekhnologiya Topliv i Masel, 1958, Nr 9, pp 13 - 18, (USSR)

ABSTRACT: The possibility of using the picrate method for separating the condensed aromatic hydrocarbons from the light oily fraction (300 - 370°C) of Cheleken petroleum was investigated, as well as the utilization of the obtained analysis data and ultra violet absorption spectra. A number of tricyclic and tri-substituted dicyclic aromatic hydrocarbons were separated. The method described by T. Cosciug (Ref.8) and improved by S. S. Nametkin et al. (Ref. 9 and 10) was used. 6.8 kg of the oil, separated from the crude petroleum of two oil wells (67 and 60) from the Cheleken region, was used as raw material; its boiling point was within the limits of 300 - 370°C. The oil was distilled into ten-grade fractions and each narrow fraction was treated with picric acid. The separated picrate was dried on a filter paper, recrystallized several times from ethyl alcohol and weighed.

Card 1/3

Condensation of Aromatic Hydrocarbons with a Light Oily Fraction of Cheleken Petroleum.

Results of this process are given in Table 1. The picrates were then decomposed with a 3% alkali solution and the separated oil extracted with ethyl ether. After separation of the ether the oil was distilled two to three times over metallic sodium and narrow fractions taken off. The physico-chemical constants of the separated aromatic hydrocarbons were then defined. The ultraviolet absorption spectra (2,900 - 3,800 Å°) of some fractions were investigated in a quartz spectrograph and recorded on a microphotometer; microphotograms of these fractions are shown in Figs. 1 and 2. The physico-chemical constants of the fractions are tabulated (Table 2). Fig.3: microphotogram of the absorption spectrum of the anthracene. During the recrystallization of picrates of higher fractions a gum-forming mass separated. It is possible that this is due to the partial oxidation or decomposition of the picrates. It is known that anthracene and its derivatives are comparatively easily oxidised and that anthraquinone and other substances are formed. The authors concluded that the picrate method is suitable for separating tricyclic condense d

SOV/65-58-9-5/16

Condensation of Aromatic Hydrocarbons with a Light Oily Fraction of Chelekhen Petroleum.

aromatic hydrocarbons from the light oily fractions of petroleum. The presence of phenanthrene and its homologues and also of tri-substituted naphthalenes was confirmed. The ultra-violet spectra were used for establishing the presence of anthracene and its homologues in some of the fractions. There are 3 Figures, 2 Tables and 14 References: 3 English, 10 Soviet and 1 German.

ASSOCIATION: Institut Khimii Turkmenskoy SSR (Institute of Chemistry of the Turkmen SSR)

1. Petroleum--Fractionation 2. Hydrocarbons--Separation
3. Picric acid--Performance 4. Spectrographic analysis

Card 3/3

4 (7), 5 (4)

AUTHORS: Musakov, M. M., Shishkina, M. V. SOV/48-23-10-31/39

TITLE: The Absorption Spectra of the Hydrocarbons of the Indan Series in the Near Ultraviolet Range

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 10, pp 1251 - 1252 (USSR)

ABSTRACT: By means of infrared and Raman analysis indan and its methylated homologues were found in a number of petroleum fractions. In order to obtain exact characteristics of the indan homologues, the hydrocarbons of indan were synthetized with one, two, and three substituents of various structuresat the Laboratoriya khimii nefti Instituta neftekhimicheskogo sinteza AN SSSR (Laboratory for Petroleum Chemistry of the Institute for the Petroleum-chemical Synthesis of the AS USSR). By means of a photoelectric spectrophotometer the absorption spectra of the solutions of indan and 14 of its derivatives in isooctane were investigated. The absorption spectra of ethyl-, isopropyl-, isobutyl-, ternary butyl-, isoamyl-, and 2-ethyl-hexyl indan all had bands with maxima at 2765, 2710, 2660, and 2630 Å. This showed that the spectra were practically independent of the structure of the substituent if the latter was saturated.

Card 1/2

The Absorption Spectra of the Hydrocarbons of the Indan Series in the Near Ultraviolet Range SOV/48-23-10-31/39

The absorption spectrum of cyclopentyl-indan was found to be shifted in the direction of longer wave lengths by 10 - 15 Å as compared to that of 5-alkyl indans, which is a consequence of the naphthene character of the substituent. The spectra of the 2-hexyl indan and isobutyl indan are practically equal to that of 1-methyl indan (maxima at 2735, 2665, 2605, and 2545 Å). In the following the spectra of the di-substituted indans with ethyl-, isopropyl- and isobutyl groups in the benzene ring, as well as those of the trisubstituted indans are briefly discussed. In conclusion it is said that the distribution of the intensities in the absorption bands does not depend on the structure of the substituting groups. There are 9 references, 6 of which are Soviet.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR (Institute for Petroleum-Chemical Synthesis of the Academy of Sciences, USSR)

Card 2/2

5(3) SOV/20-125-2-28/64

AUTHORS: Topchiyev, A. V., Academician, Mamedaliyev, G. M., Shishkina, M. V., Anikina, G. N., Kislinskiy, A. N.

TITLE: Catalytic Conversion of Cyclohexene Into Tetra-Alkyl-Benzene- and Dimethyl-Naphthalene Hydrocarbons (Kataliticheskoye prevrashcheniye tsiklogeksena v tetraalkilbenzol'nyye i dimetilnaftalinovyye uglevodorody)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 2, pp 341-344 (USSR)

ABSTRACT: Several investigations have been made into the monomeric fraction of the reaction products of the reaction mentioned in the title (Refs 1-7), the polymeric products, however, have neither been studied, nor has been elucidated the reaction mechanism by which they are formed. In the paper under consideration the authors present the results obtained on the dehydration of cyclohexanol and on the catalytic conversion of the resulting cyclohexene on alumo-silicates. The work consists entirely of an experimental part. From the results it was obvious that there is no essential difference between the conversion products of cyclohexanol

Card 1/3

Catalytic Conversion of Cyclohexene Into Tetra-Alkyl-Benzene-and Dimethyl-Naphthalene Hydrocarbons

and cyclohexene. At 200° the dehydration of the former occurs without any noticeable transformation of the cyclohexene thus produced. A further temperature increase directs the process towards isomerization, cyclohexene polymerization, and the reaction of hydrogen redistribution. The catalyzed substances from experiments at 350° and atmospheric pressure were separated into a monomeric and a polymeric fraction. The monomeric product boils out at 46-100° (Tables 1, 2). The unsaturated hydrocarbons account for 20.2% of it. About 76% of the fraction boils out at 70-73°. The product (according to the Raman spectrum) consists of more than 75% methyl-cyclopentane, some 20% methyl-cyclopentenes, 4-5% cyclohexane, and 2-3% cyclohexene. The polymeric product boils out at 190-300° (Table 3). The main component of the 240-270° fraction is 1,2-dimethyl-naphthalene with admixture of 2,6-and 1,3-dimethyl-naphthalene. From the data obtained, the most probable reaction patterns (I-VII) are given. The unsaturated compounds contained in the polymeric products are incompletely

dehydrated analogues of the hydrocarbons with a decalin structure as well as of other alkyl-substituted cyclenes. They are formed as intermediates in the conversion mentioned in the title. The results obtained permit the assumption that the cyclene conversion established in this investigation may assume vital importance in the processes of the thermo-catalytic processing of petroleum products and in the formation of aromatic hydrocarbons. There are 5 figures, 3 tables, and 13 references, 9 of which are Soviet.

SUBMITTED: December 13, 1958

5(3)

AUTHORS: Pokrovskaya, Ye. S., Shishkina, M. V. SOV/20-125-6-26/61

TITLE: On Some Alkyl-cyclopentyl-benzenes (O nekotorykh alkiltsiklopentilbenzolakh)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 6, pp 1269-1271 (USSR)

ABSTRACT: It was proved (Refs 1-3) that complex polyalkyl-benzenes which contain besides alkyl radicals also cycloalkyl radicals can be produced by the alkylation of methyl- and polymethyl benzenes with cyclopentene or cyclohexene in the presence of anhydrous aluminum chloride. The synthesis of dimethyl-isopropyl-benzene is described in the present paper. The authors proceeded from p-xylene and propylene in the presence of the same catalyst; furthermore, the obtained trialkyl-benzene-isopropyl-p-xylene is alkylated by cyclopentene. The position of the side chains was determined according to the absorption spectra in the ultraviolet range as far as an isomerization is possible in the presence of aluminum chloride. The constants of isopropyl-p-xylene agree with those listed in reference 4. A reaction prescription and the properties of p-xylene as initial substance are given. A substance with the boiling point of 75° (at 11 torr)

Card 1/4

was obtained by fractional distillation at atmospheric pressure. It does not freeze at -70°. The refractive index and the density correspond completely to those of 1,4-dimethyl-2-isopropyl-benzene (Ref 4). Figure 1 shows the spectrum of isopropyl-p-xylene (Figs 1: I) with maxima at 2755 and 2670 Å. The spectrum of pseudocumene (Ref 6) is plotted for comparison. The rather similar values of the lengths of the absorption maxima waves and their intensities in both spectra as well as the total character of the absorption point out that the position of the side chains in isopropyl-p-xylene is a 1,2,4 one. A condensation of p-xylene with propylene (in equimolar quantities) leads to the formation of the above-described 1,4-dimethyl-2-isopropyl-benzene with a certain quantity of the fraction with the boiling point 225-235° which has frozen. The crystals recrystallized from alcohol had a melting point of 36-37° and an empirical formula $C_{14}H_{22}$ according to the analysis.

In the ultraviolet range the preparation obtained was very similar to the character of the absorption spectrum of durene (Fig 1: II). 1,4-dimethyl-2-isopropyl-benzene was introduced into the reaction with cyclopentene in the presence of aluminum chloride which took place under weak heating. Cyclopentene did

not enter completely the reaction. Among other methods, repeated recrystallizations from alcohol yielded two substances: (a) (spectrum see Fig 1), melting point 29.5-30.5°, empirical formula $C_{16}H_{24}$ as fine needles; (b) fine-crystalline substance, melting point 80°. The substance (a) corresponds spectroscopically to durene. The same type of the absorption bands of cyclopentyl-p-xylene and durene is indicative of a structure of the hydrocarbons produced as follows: 1,4-dimethyl-2-isopropyl-5-cyclopentyl-benzene. It is assumed that the hydrocarbon with the melting point 80° corresponds to penta-substituted benzene with two methyl-, two cyclopentyl-, and one isopropyl group. It was, however, found that the spectrum of the aforesaid substance corresponds to that of dicyclopentyl-p-xylene (Ref 7). An empirical formula $C_{18}H_{26}$ was analytically detected for the latter. It is quite obvious that this is dicyclopentyl-p-xylene. It is produced by the interaction between 1,4-dimethyl-2-isopropyl-benzene and cyclopentene under the given conditions and with the separation of the isopropyl group which is replaced by the cyclopentyl radical. The theory of the considerable difficulties met in the production of

penta-substituted benzenes containing relatively heavy side chains is thus confirmed. There are 1 figure and 8 references, 5 of which are Soviet.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR (Institute of Petroleum-chemical Synthesis of the Academy of Sciences USSR)

PRESENTED: January 6, 1959, by A. V. Topchiyev, Academician

SUBMITTED: November 25, 1958

S/062/60/000/006/019/025/XX
B020/B060

AUTHORS: Topchiyev, A. V., Mamedaliyev, G. M., Shishkina, M. V., Anikina, G. N., and Kislinskiy, A. N.

TITLE: Conversion of Cyclenes on Aluminosilicates. Communication 1. Conversion of Cyclohexene Into Tetraalkyl Benzene- and Dimethyl Naphthalene Hydrocarbons

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1960, No. 6, pp. 1084-1093

TEXT: The monomeric fraction of the cyclohexene conversion products has been more or less thoroughly studied in papers by N. D. Zelinskiy and Yu. A. Arbuzov (Ref. 2), A. F. Plate (Ref. 3), A. V. Frost (Ref. 4), M. V. Yushkevich-Gaverdovskaya, K. P. Lavrovskiy, and others (Ref. 7), A. A. Petrov and V. V. Shchekin (Ref. 8), as well as I. A. Musayev and V. V. Shchekin (Ref. 10). These studies have not covered the polymers and their formation. The article under consideration discusses the results obtained from the study of the catalytic cyclohexene conversion on aluminosilicates.

Card 1/4

Conversion of Cyclenes on Aluminosilicates. Communication 1. Conversion of Cyclchexene Into Tetraalkyl Benzene - and Dimethyl Naphthalene Hydrocarbons

S/062/60/000/006/019/025/XX
B020/B060

The main factors of the process and the characteristics of the reaction products are indicated in Table 1. The apparatus used for the experiments has been described in Ref. 11. No basic difference was observed between the conversion products of cyclohexanol and cyclohexene. The total yield of the monomeric fraction referred to the hydrocarbon fraction of the catalyzate was 57 - 59%, and that of the polymeric fraction was 40 - 41%. The effects of temperature, feeding rate of the initial material, pressure, etc., were examined. The characteristics of the monomeric fraction are indicated in Tables 2 and 3. Table 4 gives the characteristics of the polymeric fraction. The absorption spectrum of the fraction boiling between 190° and 240°C is shown in Fig. 1, the ultraviolet absorption spectrum of the fraction boiling between 260° and 270°C in Fig. 2, and, finally, the absorption spectra of the fractions boiling at 240° - 250°C, 250° - 260°C, and 260° - 270°C are shown in Fig. 3. At atmospheric pressure and temperatures of 300° - 350°C about 60% of cyclohexene is isomerized to methyl cyclopentenes, which are then largely hydrogenized to methyl cyclopentane.

Card 2/4

Conversion of Cyclenes on Aluminosilicates. Communication 1. Conversion of Cyclohexene Into Tetraalkyl Benzene - and Dimethyl .Naphthalene Hydrocarbons

S/062/60/000/006/019/025/XX
B020/B060

About 40% of cyclohexene is isomerized, over a dimer, to hydrocarbons of the decalin- and octalin series, which are further isomerized, hydrogenolized and dehydrogenized, with tetraalkyl benzenes and dialkyl naphthalenes being obtained as the end products. Basing on the example of cyclohexene conversion the authors believe that in the refining process of petroleum products on aluminosilicates the conversion of cyclic, unsaturated hydrocarbons plays an important part in the formation of aromatic and naphthenic hydrocarbons besides other aromatizing reactions. 50 to 55% of the hydrogen consumed in the conversion process of cyclohexene serves for hydrogenizing polymeric compounds into aromatic and naphthenic hydrocarbons, and 45% for the formation of coke-like condensation products. There are 3 figures, 4 tables, and 24 references: 18 Soviet, 1 Japanese, 3 US, and 2 German.

Card 3/4

Car

SHISHKINA, M.V.; PROKOF'YEVA, Ye.A.; PETROV, Al.A.

Electron absorption spectra of some high molecular weight aromatic hydrocarbons. Trudy Inst. nefti 14:187-197 '60. (MIRA 14:5)

(Hydrocarbons—Spectra)

SOV/81-8-1-5/40

AUTHORS: Kuznetsov, M.A., Prokof'yeva, Yo.A. and Shishkina, L.V.

TITLE: Electronic Absorption Spectra of Some Indan Homologues

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 1, pp 27-35 (USSR)

ABSTRACT: The authors report their measurements of the electronic absorption spectra of indan and 15 of its derivatives. Those spectra were obtained using a "Uvispek" spectrophotometer at wavelengths between 2200 and 2850 Å at room temperature. Among the indan derivatives there were ten monosubstituted, three disubstituted and two trisubstituted indans. The results are shown in Figs 1-6, in the form of $\log \epsilon(\lambda)$, where ϵ is the molar extinction coefficient. Positions of the absorption maxima and minima of these compounds are listed in Tables 1-4. The spectrum of each compound is discussed briefly. There are 6 figures, 4 tables and 32 references, 13 of which are Soviet, 14 English, 3 French and 2 German.

SUBMITTED: July 15, 1959

Card 1/1

SHISHKINA, M.V.

Infrared absorption spectra of n-heptanols. Neftekhimiia 1 no.2:255-259 Mr-Ap '61. (MIRA 15:2)

1. Institut neftekhimicheskogo sinteza AN SSSR.
(Heptanol--Spectra)

KUSAKOV, M.M.; SHISHKINA, M.V.; PROKOF'YEVA, Ye.A.; KISLINSKIY, A.N.; SANIN, P.I.; TERENT'YEVA, Ye.M.; STEPANTSEVA, T.G.

Investigation of the oscillation spectra of hydrocarbons of the 1,1-diphenylethane series. Neftekhimia 1 no.3:317-328 My-Je '61. (MIRA 16:11)

1. Institut neftekhimicheskogo sinteza AN SSSR.

S/048/62/026/010/005/013
B117/B186

AUTHORS: Kusakov, M. M., Shimanko, N. A., Shishkina, M. V., Zimina, K. I., and Siryuk, A. G.

TITLE: Ultraviolet absorption spectra of aromatics

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 10, 1962, 1249-1252

TEXT: This paper deals with the rules governing the effect of saturated substituting groups on the absorption spectra of a number of mono- and bicyclic aromatics. It has been found that, according to the number and position of substitutes, the absorption spectrum of alkyl benzenes is shifted towards the long-wave region, and the absorption intensity maxima are intensified. In the case of cycloalkyl benzenes (naphthene-aromatic hydrocarbons) with a similar spectrum this shift is related to the substitution of cyclopentyl groups for the alkyl groups. The structure of indanes (hydrindenes), which show absorption spectra and which absorb 2-3 times more strongly than benzene, can be determined by comparing their spectra with those of corresponding alkyl-substituted benzenes and simple homologs of indane. The ultraviolet spectra of tetrahydronaphthalenes

(tetralines) follow the same laws as alkyl benzenes, cycloalkyl benzenes, and indanes. Diphenyls and benzenes have different spectra. Most m- and p-substituted diphenyl homologs are characterized by strong absorption and by the absence of a fine structure in the bands. The spectra of ortho-substituted diphenyl are subject to considerable changes. Diphenyl alkanes and alkyl diphenyl alkanes: The absorption spectra of several diphenyl methanes are similar to those of benzene. The spectra of aromatics with condensed rings show a specific character. Naphthalene has an absorption spectrum covering the range 2100-3300 Å and is characteristic of all naphthalene homologs. As the absorption spectra characteristic of polycyclic aromatics are hardly affected by substituting groups these are suitable for analytical purposes. An atlas (M. M. Kusakov, N. A. Shimanko, M. V. Shishkina, Ul'travioletovyye spektry pogloshcheniya aromaticheskikh uglevodorodov (Ultraviolet absorption spectra of aromatics), Izd. AN SSSR, M., 1962) was compiled for the practical application of ultraviolet spectroscopy. The ultraviolet spectra of mono- and bicyclic aromatics, graphically represented on the same scale and in terms of $\varepsilon = f(\lambda)$ or $\log \varepsilon = f(\lambda)$, were partly recorded by the present authors and partly taken from publications (American Petroleum Institute Research Project 44, Ultraviolet Spectral Data, 1958).

S/048/62/026/010/006/013
B117/B186

AUTHORS: Shimanko, N. A., Shishkina, M. V., Kusakov, M. M., and Sidorenko, V. I.

TITLE: Absorption spectra of diphenyl alkane series of hydrocarbons in the near ultraviolet

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 10, 1962, 1252-1256.

TEXT: Absorption spectra of isooctane solutions of several polycyclic aromatic and naphthene-aromatic hydrocarbons, C_{14} - C_{32}, with isolated benzene rings, were examined at room temperature using an "Uvispek" spectrophotometer, the compounds being as synthesized by Ye. M. Terent'yeva et al. (Neftekhimiya, 1, no. 2, 141 (1961)), M. G. Rudenko and Al. A. Petrov (Zh. prikl. khimii. 34, 613 (1961)). All the spectra except that of 1,1-diphenyl ethane were obtained for the first time (Figs. 1-4). It is shown that the spectra of hydrocarbons belonging to the 1,1-diphenyl ethane series can be well simulated by adding the absorption spectrum of mono-substituted benzene to that of the corresponding polysubstituted benzene.

Card 1/ø 2

The total curves so obtained, representing characteristic spectra of complex molecules, indicate the number and position of each absorption minimum and maximum. This method is proposed for the structural analysis of the components of bicyclic hydrocarbons. There are 4 figures.

Figs. 1-4. Absorption spectra in the near ultraviolet.
Legend to Fig. 1: (1) 1,1-diphenyl ethane; (2) 1,2-diphenyl propane; (a) isopropyl benzene; (3) 1,1-di-(4-isopropyl-phenyl)-hexane; (6) 1-methyl-4-isopropyl benzene.

Legend to Fig. 2: (4) 1,2-di-(paraxylyl)-propane; (a) 1,2,4-trimethyl benzene; (5) 1-phenyl-1-(paratolyl)-ethane; (6) 1-phenyl-1-(paraethyl-phenyl)-ethane; (6) isopropylbenzene + 1-methyl-4-isopropyl benzene.

Legend to Fig. 3: (7) 1-phenyl-1-(2,5-dimethyl-phenyl)-ethane; (8) 1-phenyl-1-(2,4,5-trimethyl-phenyl)-ethane; (9) 1-phenyl-1-(2,4,6-trimethyl-phenyl)-ethane; (a) isopropyl benzene + 1,2,4-trimethyl benzene; (10) 1-(paraxylyl)-2-hexyl-4-phenyl butane.

S/048/62/026/010/008/013
B117/B186

AUTHORS: Shishkina, M. V., Kusakov, M. M., and Tsytovich, N. E.

TITLE: Infrared absorption spectra of indane series hydrocarbons

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 10, 1962, 1260-1263

TEXT: Infrared absorption spectra of indane derivatives were analyzed within the range 5-15 μ. Ultraviolet spectra of these derivatives have been described in earlier papers (M. M. Kusakov, Ye. A. Prokof'yeva, M. V. Shishkina, Optika i spektroskopiya, 8, 27 (1960)). Spectra of these compounds from one to three C_1 - C_{10} substituting groups displayed several characteristics that distinguish indanes from benzenes substituted correspondingly, and which allow of determining them within the range mentioned. Conclusions: The indane spectrum obtained here agreed with published data (J. Entel, C. H. Rouf, H. C. Howard, Anal. Chem., 25, 1303 (1953)). The spectra of 1-isopropylene indane and 1-cyclopentyl indane are similar to that of 1-methyl indane (same reference) but do not exclude the presence of an isomer substituted in position 2. A comparison

C. Card 1/2

KRENTSEL', B.A.; SIDOROVA, L.G.; SHISHKINA, M.V.; KUSAKOV, M.M.; KORENEVSKAYA, F.V.; SHCHEKIN, V.V.

Conversion polymerization of α-olefins. Neftekhimiia 2 no.5: 705-708 S-O '62. (MIRA 16:1)

1. Institut neftekhimicheskogo sinteza AN SSSR.
(Olefins) (Polymerization)

CHERTKOV, Ya.B.; SHISHKINA, M.V.; AFANAS'YEVA, N.A.

Hydroxyl-containing compounds in the middle distillate petroleum fuels. Zhur.prikl.khim. 35 no.11:2460-2466 N '62. (MIRA 15:12)
(Petroleum as fuel) (Hydroxyl group—Spectra)

SEMENIDO, G. Ye.; IL'INA, D. Ye.; SHISHKINA, M. V.; KRENTSEL', B. A.

Polymerization of trichloroacetaldehyde in the presence of an organometallic catalyst. Dokl. AN SSSR 147 no.6:1386-1388 D '62. (MIRA 16:1)

1. Institut neftekhimicheskogo sinteza AN SSSR. Predstavleno akademikom A. V. Topchiyevym.

(Acetaldehyde) (Polymerization)
(Catalysts)

KUSAKOV, Mikhail Mikhaylovich; SHIMANKO, Nina Aleksandrovna; SHISHKINA, Margarita Vladimirovna; BAZHULIN, P.A., doktor fiziko-matem. nauk, otv. red.; LOSKUTOVA, I.P., red.; POLYAKOVA, T.V., tekhn. red.

[Ultraviolet absorption spectra of aromatic hydrocarbons]Ul'trafioletovye spektry pogloshcheniia aromaticheskikh uglevodorodov. Moskva, Izd-vo Akad. nauk SSSR, 1963. 269 p. (MIRA 16:2)
(Hydrocarbons--Absorption spectra)

SHISHKINA, M. V.

"Issledovaniye infrakrasnykh spektrov polietoksenov."

report submitted for the VIIth European Congress on Molecular Spectroscopy, Budapest, 22-27 Jul 1963

ADYLOV, S.A.; LESHCHEVA, I.F.; IL'INA, D.Ye.; SHISHKINA, M.V.; KRENTSEL', B.A.

Chemical structure of some chlorinated polyolefins. Neftekhimiia 3 no.1:82-89 Ja-F '63. (MIRA 16:2)

1. Institut neftekhimicheskogo sinteza AN SSSR.
(Olefins) (Chlorination)
(Chemical structure)

POPOV, Yu.A.; DAVYDOV, B.E.; SHISHKINA, M.V.; KRENTSEL', B.A.

Thermal conversions of polymeric Schiff bases. Izv. AN SSSR. Ser. khim. no.11:2014-2019 N '63. (MIRA 17:1)

1. Institut neftekhimicheskogo sinteza AN SSSR.

S/190/63/005/003/003/024
B101/B186

AUTHORS: Adylov, S. A., Il'ina, D. Ye., Krentsel', B. A., Shishkina, M. V.

TITLE: Interaction of chlorinated polyethylene with amines and ammonia

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 5, no. 3, 1963, 316-320

TEXT: A study was made of the reaction of chlorinated polyethylene suspended in toluene with aniline or di-n-butylamine at 50 - 70°C, as well as of the reaction of chlorinated polyethylene with aqueous ammonia solution in glass ampuls in nitrogen atmosphere at 70°C. The chlorination of the high-density polyethylene (m.p. 132°C, $[\eta]$ = 4.15 in decalin at 135°C) was made according to a method devised for the chlorination of polypropylene (Zh. prikl. khimii, 32, 1404, 1959). Results: the IR spectra of the chlorinated polyethylene showed the presence of C-Cl bonds. Chlorinated products of different chlorine content were obtained. The intrinsic viscosity decreased as the chlorine content increased. It was 4.1 at 1.3% Cl and 0.7 at 60.9% Cl. X-ray analysis showed that the crystalline structures

Card 1/2

S/190/63/005/004/014/020
B101/B220

AUTHORS: Krentsel', B. A., Semenido, G. Ye., Il'ina, D. Ye., Shishkina, M. V.

TITLE: Degradation of polymers containing chlorine. II. Dehydrochlorination mechanism of chlorinated polypropylene

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 5, no. 4, 1963, 564-567

TEXT: The IR spectra of chlorinated polypropylene were studied after thermal treatment at 120 and 238°C. A comparison with the IR spectrum of polypropylene shows that chlorine substitutes mainly the H atoms bound to the tertiary C atoms. Thermal treatment at 120°C had almost no effect on the IR spectrum. At 238°C, however, several bands were observed which confirmed crosslinking by intermolecular dehydrochlorination. A discussion of the possible reaction processes shows that a radical mechanism is improbable, since its activation energy, E = 36.5 kcal/mole, is higher than the activation energy of dehydrochlorination, E = 8 kcal/mole, and the radical process sets in only above 140°C. Hence an ionic mechanism is assumed. The polarizing effect of chlorine induces positive charges at the α and β

Degradation of polymers ...

C atoms so that protons are knocked out and crosslinking sets in. There is 1 figure.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR (Institute of Petrochemical Synthesis of AS USSR)

SUBMITTED: October 2, 1961

Card 2/2

ALIYEV, A.D.; ARBATSKIY, A.V.; CHISHKINA, M.V.; KRENTSEL', B.A.

Stereospecific polymerization of trans-1-phenyl-1,3-butadiene.
Dokl. AN SSSR 153 no.2:333-335 N '63. (MIRA 16:12)

1. Institut neftekhimicheskogo sinteza AN SSSR. Predstavleno akademikom V.A.Karginym.

L 17086-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RM

ACCESSION NR: AP4047685 S/0204/64/004/005/0735/0740

AUTHOR: Topchiyev, A. V. (Deceased); Mushina, Ye.A.; Perel'man, A.I.; Shishkina, M.V.

TITLE: Relative activity of some monomers in the polymerization reaction on a chromium oxide catalyst

SOURCE: Neftekhimiya, v. 4., no. 5, 1964, 735-740

TOPIC TAGS: vinylcyclohexane, allylcyclohexane, allylbenzene, phenylbutene, phenyl pentene, polymerization catalyst, chromium oxide catalyst, aromatic polymer

ABSTRACT: The polymerizability of monomers containing naphthene and other aromatic rings in the presence of a chromium oxide catalyst was investigated in relation to their structure. The polymerization rate at different temperatures at a monomer concentration of 0.0022-0.0024 mole/ml in heptane, and with 10% catalyst by weight, was plotted in relation to the total amount of monomer and solvent. On the basis of these curves, the velocity constants and initial velocities were determined. The total activation energy was found to be about 12.5 kcal for all monomers even though the velocity values vary over a wide range. According to the kinetic characteristics, the relative activity of the monomer decreases if the naphthene ring is replaced by benzene and the vinyl group approaches the ring: allylcyclo-hexane > vinylcyclohexane > 5-phenyl-1-pentene > 4-phenyl-1-butene > allyl

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L 17086-65

ACCESSION NR: AP4047685

5

benzene. The relative activity of the monomers is increased by the removal of the vinyl group from the ring because the side chain becomes more flexible and the orientation of the monomer molecules on the surface of the catalyst favors the reaction of the vinyl group with the surface of the catalyst. The properties of the resulting polymers are tabulated. The relative activity was also increased in the presence of a chromium oxide catalyst or by the replacement of the benzene ring with cyclohexane. The isomerization of the monomer, proceeding as a side reaction parallel to the polymerization in the presence of a chromium oxide catalyst, was also investigated. The structure of the monomers before and after polymerization was investigated by their infrared spectra. With increasing temperature of polymerization of vinylcyclohexane, the isomerizing effect of the chromium oxide catalyst increased. "The authors express their gratitude to I. Yu. Tsarevskaya for the determination of the glass transition and melting points of the polymers and to A. T. Svyatoshenko for determining the composition of the isomerization product by capillary chromatography. T. A. Komova also took part in the experimental work."
Orig. art. has: 2 figures and 5 tables.

ASSOCIATION: Institut neftekhimicheskogo sinteza im. A. V. Topchiyeva AN SSSR (Institute of Petrochemical Synthesis, AN SSSR)

SUBMITTED: 02Oct63 ENCL: 00 SUB CODE: GC, OC
NO REF SOV: 007 OTHER: 008

L 49762-65 EPF(c)/EWT(m) Pr-4 RM UR/0058/65/000/003/D033/D033

ACCESSION NR: AR5012253

25
B

SOURCE: Ref. zh. Fizika, Abs. 3D240

AUTHORS: Kislinskiy, A. N.; Ter-Asaturova, N. I.; Terent'yeva, Ye. M.; Shishkina, M. V.

TITLE: Investigation of vibrational spectra of hydrocarbons of the 1,1-dicyclohexylethane series

CITED SOURCE: Tr. Komis. po spektroskopii. AN SSSR, vyp 1, 1964, 349-360

TOPIC TAGS: vibrational spectrum, hydrocarbon, Raman spectrum, hydration, depolarization

TRANSLATION: The Raman spectra of the products of hydration of C_{14}--C_{18} hydrocarbons of the 1,1-diphenylethane series, as well as the spectra of 1-methyl 3-phenylindane and the product of its hydration were obtained and investigated. The values of the degree of the polarization were measured for the most intense spectral lines. It is shown that in each of these spectra there are present all the char-

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L 49762-65
ACCESSION NR: AR5012253

acteristic frequencies which have been established from the published data for some particular structural element. In the spectra of hydrocarbons with 1,4-disubstituted cyclohexane ring, there are present lines that are characteristic of the cis- and trans-isomers. It is estsblished that the characteristic nature of the frequencies and intensities of the bands of the monosubstituted cyclohexane rings is retained in the infrared absorption spectra of the hydrocarbons of the series of 1,1-dicyclohexylethane.

SUB CODE: OP, OC ENCL: 00

BJR
Card 2/2

L 49011-65 EWT(m)/EWP(j) Pc-4 RM

ACCESSION NR: AR5012257 UR/0058/65/000/003/D034/D034

19
B

SOURCE: Ref. zh. Fizika, Abs. 3D254

AUTHOR: Kusakov, M. M.; Niyazov, A. M.; Sidorenko, V. I.; Shimanko, N. A.; Shishkina, M. V.

TITLE: Some properties of the infrared and ultraviolet absorption spectra of naphthene-aromatic ketones

CITED SOURCE: Tr. Komis. po spektroskopii. AN SSSR, vyp. 1, 1964, 370-381

TOPIC TAGS: ir absorption spectra, ultraviolet absorption spectra, naphthene aromatic ketone

TRANSLATION: It is shown that the frequency 1675 cm^{-1} of the valent number for the carbonyl ketone group keeps its value when the 5-member naphthene cycle is changed to a 6-member cycle and during the injection of various numbers of alkyls into naphthene and benzene cyclic compounds. The carbonyl group affects the frequency of the deficiency number of C-H aromatic nuclei bonds. In the infrared absorption spectra a series of characteristic bands was found, which made it possible to dis-

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L 49011-65

ACCESSION NR: AR5012257

tinguish between the spectra of these ketones with 5- and 6-member cycles and to identify naphthene-aromatic ketones derived from naphthenic acids. Three specified absorption regions were found in the ultraviolet absorption spectra: 3000-3500, 2400-2800 and 2200-2400 Å. The second region characterizes the number, position and nature of substituents in the aromatic ketone compound, and the third--the presence of a carbonyl group, the nature of the aromatic nucleus and its substituents, and also their number and position. This latter region can be used for characteristics of the degree of reduction of ketones to corresponding hydrocarbons.

ENCL: 00

SUB CODE: OP

Card 2/2

L 48978-65 EWG(j)/EWT(m)EPF(c)/EPF(n)-2/EWP(j)/T/EWA(h)/EWA(1) Pc-4/Pr-4/Peo/Pu-4
GG/RM

ACCESSION NR: AP5009661 UR/0062/65/000/003/0520/0525

AUTHOR: Khutareva, G. V., Shishkina, M. V., Davydov, B. E.

TITLE: Polymerization of salts of propiolic acid

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 3, 1965, 520-525

TOPIC TAGS: propiolic acid polymer, unsaturated carboxyl acid, acetylene polymerization, metal polypropiolate, radiation polymerization

ABSTRACT: The authors studied the solid-phase radiation-induced polymerization of certain salts of propiolic acids formed by univalent and divalent metals. The polymerization of propiolates formed by ammonia, hydrazine, butylamine, and dicyclohexylamine was also carried out. X-ray structural analysis revealed that in all cases, the polymerization was accompanied by a breakdown of the crystal lattice of the monomer. Hence, the tendency of the various salts toward polymerization depends on the stability of this lattice, the stability in turn being determined by the radius and valence of the cation. As a rule, the total yield of the polymer was substantially higher in the polymerization of propiolates of divalent metals than in the case of univalent metals. The barium and cadmium salts polymerized almost quantitatively at suitable integral doses. Polymerization induced by gamma rays is accompanied by radiolysis, the amount of radiolysis products being no

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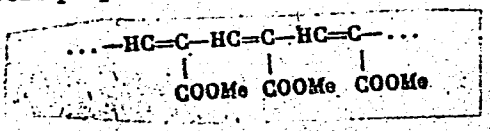
L 48978-65

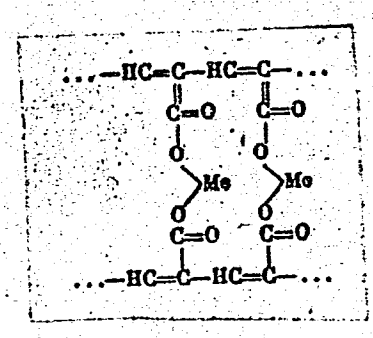
ACCESSION NR: AP5009661

higher than 1 to 1.5%. The following structures for the polypropiolates of univalent metals (I) and divalent metals (II) were proposed:



(1)

and



(2)

Card 2/3

L 48978-65
ACCESSION NR: AP5009661

Orig. art. has: 4 figures, 3 tables, and 2 formulas.

ASSOCIATION: Institut neftekhimicheskogo sinteza im. A.V. Topchiyeva Akademii nauk SSSR (Institute of Petrochemical Synthesis, Academy of Sciences,, SSSR)

SUBMITTED: 12Jun64 ENCL: 00 SUB CODE: OC , GC

NO REF SOV: 001 OTHER: 001

Card 3/3

GOL[illegible], Yu.Ya.; KERSHENBAUM, I.L.; SHISHKINA, M.V.

Structure of the product of silvan polymerization in the presence of a complex metallo-organic catalyst. Izv. AN SSSR. Ser. khim. no.6:1095-1101 Je '64. (MIRA 17:11)

1. Institut neftekhimicheskogo sinteza im. A.V. Topchiyeva AN SSSR.

KHUTAROVA, G.V.; SHISHKINA, M.V., DAVYDOV, B.E.

Polymerization of propiolic acid salts. Izv. AN SSSR. Ser. khim. no.3:520-525 '65. (MIRA 18:5)

1. Institut neftekhimicheskogo sinteza im. A.V.Topchiyeva AN SSSR.

L 27400-65 EWT(m)/EPF(c)/EPF(n)-2/EWG(m)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4/Pu-4
RPL RWH/WW/GG/RM

ACCESSION NR: AP5006082 S/0204/65/005/001/0090/0096

54
38
B

AUTHOR: Khutareva, G. V.; Krentsel', B. A.; Shishkina, M. V.; Davydov, B. E.

TITLE: Polyermization of acetylenecarboxylic acid in the liquid and solid phases

SOURCE: Neftekhimiya, v. 5, no. 1, 1965, 90—96

TOPIC TAGS: acetylenecarboxylic acid, polymerization, radiation induced polymerization, organic semiconductor, semiconducting polymer

ABSTRACT: A study has been made of the thermal, photo, and radiation-induced polymerization of acetylenecarboxylic acid in the liquid or solid phase, or in solution:

$$HC\equiv C-COOH \rightarrow \sim HC=C-HC=C-HC=C\sim$$
$$\qquad\qquad\quad COOH \quad COOH \quad COOH$$

The effect of polymerization conditions on the occurrence of the side reactions of dehydration and decarboxylation was determined. It was found that radiation-induced polymerization is a good preparative method whereby side reactions are mini-

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L 27400-65

ACCESSION NR: AP5006082

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mized. In radiation-induced polymerization, the product is a dark solid, soluble in water, ethanol, and acetone up to degrees of conversion of the order of 33%; it is radiation resistant, but it is decarboxylated to form insoluble products by light in aqueous media and by heat. The polymer gives an EPR signal and is a high-ohmic semiconductor ($\partial_{20} = 0.6 \times 10^{-14}$ ohm^{-1} cm^{-1}). This work was done in view of the interest in a polymer which combines the properties of a conjugated system and those of a stiff-backbone polymeric electrolyte and which can be chemically modified. Orig. art. has: 5 figures, 2 tables, and 1 formula. [SM]

ASSOCIATION: Institut neftekhimicheskogo sinteza im. A. V. Topchiyeva AN SSSR (Institute of Petrochemical Synthesis, AN SSSR).

SUBMITTED: 26Jun64 ENCLOSURE: 00 SUB CODE: OC, GC

NO REF SOV: 000 OTHER: 003 ATD PRESS: 3192

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